

Pilot Demonstration for Radiological Waste Volume Reduction
FUSRAP Maywood Superfund Site
Maywood, New Jersey

This paper will present a case study of a Pilot Demonstration being performed at the Formerly Utilized Sites Remedial Action Program (FUSRAP) Maywood Superfund Site to evaluate waste volume reduction technologies. The paper will present the process used to select appropriate technologies, configuration of the systems tested, operational issues encountered, and preliminary results of the demonstration.

Over 200,000 cubic yards of radiologically contaminated soil is estimated to be present at the Maywood site. The Comprehensive Environmental, Response, Compensation, and Liability Act (CERCLA) and the National Oil and Hazardous Substances Contingency Plan (NCP) both indicate the need to evaluate alternative technologies to reduce the toxicity, mobility, or volume of hazardous substances, pollutants, or contaminants on Superfund Sites. Through the evaluation and potential use of the Pilot Demonstration treatment technologies, not only are the regulatory mandates being satisfied, but there is the potential that their full scale use could save the project several million dollars and reduce the project duration.

The technologies being evaluated include a gravel separation and rinse system and a soil sorting system. The gravel separation system consists of mechanical screens to remove material greater than 3/8 inch diameter. Previous investigations have indicated that material in this size fraction does not contain significant radiological contamination. The screening is followed by rinsing the >3/8 inch material to remove any adhering finer grained particles which may be radiologically contaminated. The gravel separation and rinse system is a closed system that filters and recycles the rinse water. The soil sorting system being utilized is called the Segmented Gate System which has been deployed at various Department of Energy facilities. The purpose of the system is to sort out radiologically contaminated soil from clean soil. The system being used for the demonstration was fabricated and will be operated by Thermo NuTech. It consists of a soil feed belt passing below two Sodium Iodide detector banks. The detectors assay the soil based upon selected criteria and separate the soil into either a below criteria or above criteria stockpile. The two systems are being piloted individually and in combination to optimize cost and performance. The latest Pilot Demonstration results will be presented in the paper.